

What is claimed is:

1. A pattern forming method, comprising the steps of:  
forming a first resist pattern containing a photo-acid  
generating agent on a substrate;  
irradiating light to an exposed surface of the first  
resist pattern;  
coating a resist film containing a cross-linking agent,  
which reacts with acid, on the substrate after irradiation of  
the light in a state where it covers the first resist pattern;  
causing a cross-linking reaction at an interface between  
the first resist pattern and the resist film to grow a  
cross-linked layer; and  
forming a second resist pattern made of the cross-linked  
layer and the first resist pattern.
2. A pattern forming method according to claim 1, wherein  
the light is one selected from the group consisting of ArF  
excimer laser light and KrF excimer laser light.
3. A pattern forming method according to claim 1, wherein  
a base resin of a resist material forming the first resist  
pattern containing the photo-acid generating agent is one  
selected from the group consisting of methacrylic resin and  
cycloolefin resin.
4. A pattern forming method according to claim 1, wherein  
a base resin of the resist film containing the cross-linking  
agent, which reacts with the acid, is one selected from the

group consisting of polyvinyl alcohol system resin, polyacrylic acid system resin, and polyvinyl acetal system resin.

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